5

10



ABSTRACT OF THE DISCLOSURE

A sequence control mechanism enables out-of-order processing of contexts by processors of a symmetric multiprocessor system having a plurality of processors arrayed as a processing engine. The processors of the engine are preferably arrayed as a plurality of rows or clusters embedded between input and output buffers, wherein each cluster of processors is configured to process contexts in a first in, first out (FIFO) synchronization order. However, the sequence control mechanism allows out-of-order context processing among the clusters of processors, while selectively enforcing FIFO synchronization ordering among those clusters on an as needed basis, i.e., for certain contexts. As a result, the control mechanism reduces undesired processing delays among those processors.